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NET GEOGRAPHIC MIGRATION FOR MONTANA - 1950 TO 1960 BY AGE, SEX AND EDUCATIONAL LEVEL

Kenneth P. Johnson

BUREAU OF BUSINESS AND ECONOMIC RESEARCH missoula ● montana

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by

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University of Montana
School of Business Administration
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INTRODUCTION

It is widely believed that Montana exports much of its best talent through continual outmigration of its best-educated young people. To our knowledge, this hypothesis has never been tested formally, and no systematic estimates of migration by level of education have been made. To supply this lack, estimates of net migration of persons in various education groups, classified by age and sex, between 1950 and 1960 are presented in this paper.

The analysis deals with migration of the cohort of persons aged 5 and over in 1950 (15 and over in 1960).[1] Four levels of educational achievement are distinguished: no high school education; at least some high school, but no college; some college, but less than four years completed; and four years of college or more. These correspond to the Census Bureau's education categories 0-8, 9-12, 13-15, and 16 or more years of school completed. They will be referred to as the elementary, high school, some college, and college graduate groups respectively. (It should be noted, however, that not everyone who has attended school for 12 years has graduated from high school; nor has everyone who has attended school 16 years received a bachelor's degree.)

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1. As used in this paper, the term "cohort" refers to a group of persons born during the same specific period of time. Thus, the cohort of persons aged five and over on April 1, 1950 refers to all people born prior to April 1, 1945 and is the same cohort as all persons aged 15 and over on April 1, 1960.

The geographic migrations for education groups are initially estimated by sex, and these estimates are then extended to provide age detail.

Definitions

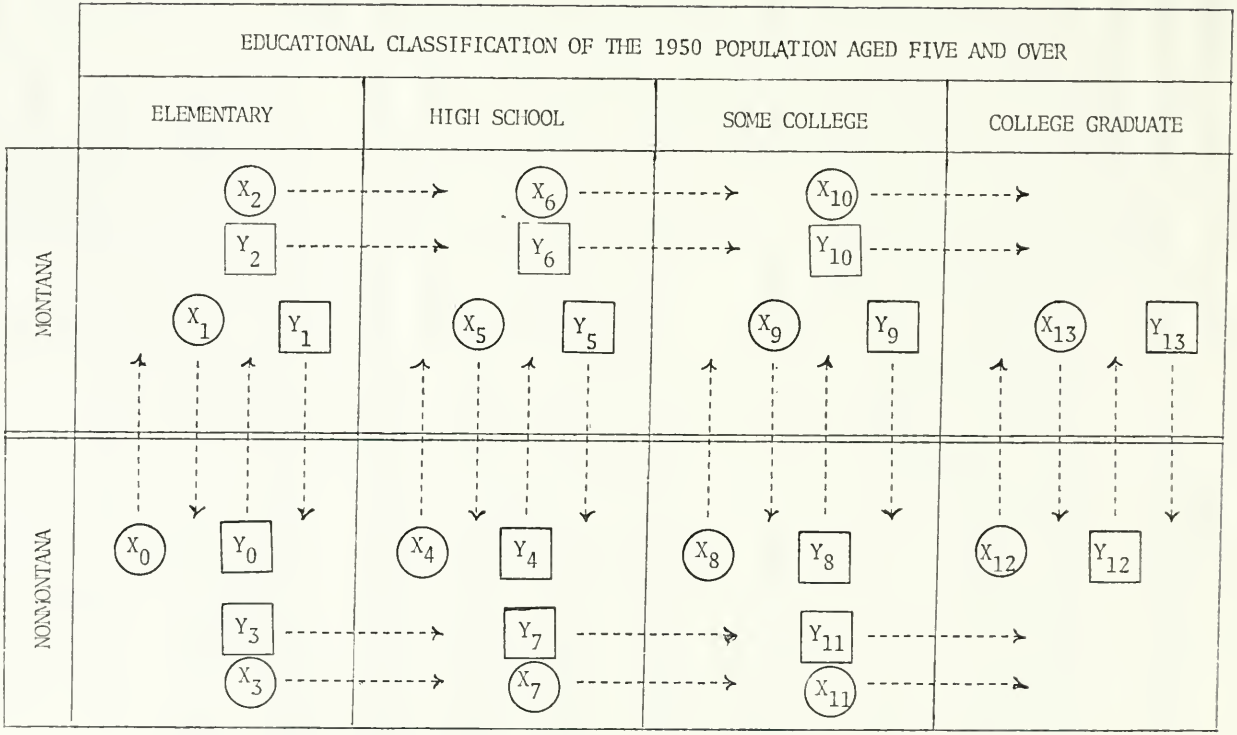
The diagram on the following page is used to clarify the concept of net geographic migration used here. Although some of the movements designated in the chart are superfluous for this discussion, they are included to make the diagram complete.

We are primarily concerned with the population interchanges between Montana and all other areas. Thus, as of April 1, 1950, all people are categorized as Montanans or nonMontanans and further classified into the four education groups being considered in this paper. The resulting cross-classifications are represented by the eight large squares in the schematic representation on the following page.

The arrows in the diagram represent the total movements from one classification to another during the decade April 1, 1950 to April 1, 1960. The vertical arrows represent geographic movements whereas the horizontal arrows represent changes in educational achievement. An arrow with a circle at its butt represents movement of people who were Montana residents on April 1, 1950; and an arrow with a box at its butt represents movements of people who were not Montana residents at that time.

We will refer to all people who were in Montana in April 1, 1950 as "original residents" and all others simply as "nonresidents." The X_i's and Y_i's in the diagram are defined as follows:

SCHEMATIC REPRESENTATION OF GEOGRAPHIC AND EDUCATIONAL MOVEMENTS DURING THE DECADE 1950 TO 1960



X_0 = Number of original residents who left and then reentered the state during the decade while remaining in the elementary group.

X_1 = Number of original residents who left the state during the decade from the elementary group.

X_2 = Number of original residents who moved from the elementary group to the high school group in Montana's school system during the decade.

X_3 = Number of original residents who moved from the elementary group to the high school group while in another state.

X_4 = Number of original residents who reentered the state into the high school group during the decade.

X_5 = Number of original residents who left the state from the high school group during the decade.

X_6 = Number of original residents who moved from the high school group to the some college group in Montana's school system.

X_7 = Number of original residents who moved from the high school group to the some college group while out of the state.

X_8 = Number of original residents who reentered the state into the some college group during the decade.

X_9 = Number of original residents who left the state from the some college group.

X_{10} = Number of original residents who moved from the some college group to the college graduate group in Montana's school system.

X_{11} = Number of original residents who moved from the some college group to the college graduate group while out of the state.

X_{12} = Number of original residents who reentered the state into the college graduate group.

X_{13} = Number of original residents who left the state from the college graduate group.

Y_0 = Number of nonresidents who entered Montana into the elementary group.

Y_1 = Number of nonresidents who entered and then left Montana while remaining in the elementary group.

Y_2 = Number of nonresidents who moved from the elementary group to the high school group in Montana's school system.

Y_3 = Number of nonresidents who moved from the elementary group to the high school group in some school system not in Montana.

Y_4 = Number of nonresidents who entered Montana into the high school group.

Y_5 = Number of nonresidents who left Montana from the high school group.

Y_6 = Number of nonresidents who moved from the high school to the some college group while in Montana.

Y_7 = Number of nonresidents who moved from the high school group to the some college group while out of the state.

Y_8 = Number of nonresidents who entered Montana into the some college group.

Y_9 = Number of nonresidents who left Montana from the some college group.

Y_{10} = Number of nonresidents who moved from the some college group to the college graduate group while in Montana.

Y_{11} = Number of nonresidents who moved from the some college group to the college graduate group while out of the state.

Y_{12} = Number of nonresidents who entered Montana into the college graduate group.

Y_{13} = Number of nonresidents who left Montana from the college graduate group.

Let NM_j denote the net geographic migration during the decade for Montana education group j where j denotes level of educational achievement. For the elementary group, j = 1; for the high school group, j = 2; for the some college group, j = 3; and for the college graduate group, j = 4.

Net geographic migration between 1950 and 1960 for a given education group is defined as the difference between the number of people entering the state while in that education group and the number of people leaving the state while in that education group. Referring to the diagram:

(1) $NM_1 = (X_0 + Y_0) - (X_1 + Y_1)$

(2) $NM_2 = (X_4 + Y_4) - (X_5 + Y_5)$

(3) $NM_3 = (X_8 + Y_8) - (X_9 + Y_9)$

(4) $NM_4 = (X_{12} + Y_{12}) - (X_{13} + Y_{13})$

An alternative definition of net geographic migration is sometimes used. It defines net geographic migration for an education group as the difference between the final population in that group and the final population which would have been in that group if there had been no geographic migration for the state as a whole.

Briefly, the alternative concept posits that, in the absence of any migration, the anticipated population of any education group would equal the 1950 population in that group minus deaths, plus net change occurring through educational achievement of original residents. The difference between the anticipated population and the actual 1960 population in any specific education group is then taken to be the net

migration for that group. What this concept measures, then, is the effect of migration on the educational distribution of Montana's population in 1960.

The definition used here, however, measures actual net movements of people in various education groups. It thereby indicates the educational selectivity of net geographic migration for Montana.

For example, if 1,000 people in the elementary group had entered Montana during the 1950s, finished college in the state, and were living here in 1960, our definition would record this as an inmovement of 1,000 persons in the elementary group. The alternate definition would include these people as a gain through geographic migration for the college graduate group. For those interested in the educational achievement of people at the time they move, the definition we have chosen seems more useful than the alternate one.

Estimating Procedure

We wish to estimate net migrations as defined by equations (1) through (4) for the education groups in Montana. (It is impossible, given available data, to estimate each of the quantities X_i and Y_i ($i = 0, 1, 2, \ldots, 13$) in the diagram, so it must suffice to estimate the net results for each of the education groups.)

Let P_j^{50}, P_j^{60}, and D_j denote 1950 population, 1960 population, and deaths during the decade 1950 to 1960 respectively for Montana education group j. It is apparent from the chart that:

$$(5)\quad P_1^{60} = (P_1^{50} - D_1) - (X_2 + Y_2) + (X_0 - X_1 + Y_0 - Y_1)$$

$$(6)\quad P_2^{60} = (P_2^{50} - D_2) + (X_2 + Y_2) - (X_6 + Y_6) + (X_4 - X_5 + Y_4 - Y_5)$$

$$(7)\quad P_3^{60} = (P_3^{50} - D_3) + (X_6 + Y_6) - (X_{10} + Y_{10}) + (X_8 - X_9 + Y_8 - Y_9)$$

$$(8)\quad P_4 = (P_4 - D_4) + (X_{10} + Y_{10}) + (X_{12} - X_{13} + Y_{12} - Y_{13}).$$

Manipulations of these equations provide the required estimates. The equations simply state that the 1960 population in any education group in Montana is equal to the number of survivors from the 1950 population in that education group, plus increases due to people attaining that level of educational achievement while living in the state, minus losses caused by people attaining the next highest level of educational achievement while living in the state, plus net geographic migration [as defined by the appropriate equation in the set of equations (1) through (4)].

The 1950 census provides data on levels of educational achievement for Montana's population as of April 1, 1950 by five-year age groups, so it is possible to estimate the survivors $(P_j^{50} - D_j)$ for each education group by applying census survival rates to the original age group data for each education group.[2] The 1960 census provides similar data so the values of P_j^{60} are available directly.

The estimation of gains and losses through educational movements is straightforward. The total number of students who enrolled as high school freshmen in Montana during the school years 1949-50, 1950-51, 1951-52, . . ., 1958-59[3] is precisely the quantity $(X_2 + Y_2)$ which is

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2. U.S. Department of Commerce, Bureau of the Census, "National Census Survival Rates, by Color and Sex, for 1950 to 1960," Current Population Reports, Series P-23, No. 15 (July 12, 1965).

3. It may seem that the school years to be used are 1950-51, . . ., 1959-60. However, since the census reports by highest grade completed as of April, and the school year ends in June, the correct years are as originally stated.

the loss for the elementary group which accrues to the high school group. Similarly, the total number of students in Montana who entered college for the first time during the same years is $(X_6 + Y_6)$, which decreases the high school group but increases the "some college" group. Finally, the total number of students receiving bachelor's degrees in Montana in the above years is $(X_{10} + Y_{10})$, which is a loss to the some college group and a gain to the college graduate group.[4] These totals can all be estimated using data available from Montana schools.

Thus, the only quantity which is unknown in each of the equations (5) through (8) is the net geographic migration which can be derived as:

$$(9)\quad NM_1 = P_1^{60} - [(P_1^{50} - D_1) - (X_2 + Y_2)]$$

$$(10)\quad NM_2 = P_2^{60} - [(P_2^{50} - D_2) + (X_2 + Y_2) - (X_6 + Y_6)]$$

$$(11)\quad NM_3 = P_3^{60} - [(P_3^{50} - D_3) + (X_6 + Y_6 - (X_{10} + Y_{10})]$$

$$(12)\quad NM_4 = P_4^{60} - [(P_4^{50} - D_4) + (X_{10} + Y_{10})].$$

Finally, these net migrations are converted to rates (R_j) where the rate of geographic migration is defined as:

$$(13)\quad R_j = \frac{NM_j}{\text{Average Population in Group j During the Decade}} = \frac{NM_j}{\frac{P_j^{50} + P_j^{60}}{2}}$$

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4. The question has been posed as to whether this definition is satisfactory for college students since many people attend and graduate from college in states of which they are not legal residents. However, for both the 1950 and 1960 censuses, college students were considered residents of the communities in which they were residing while attending college, so it is not possible to identify either Montana residents attending college out of state or nonresidents attending college in Montana. These groups will tend to balance one another somewhat but, to the extent that they differ, it is felt that our definition assigns the proper migration status to the difference.

DATA, COMPUTATIONS, AND RESULTS

This section describes, step by step, the calculation of net migration, and presents the findings.

The census data on educational achievements of the 1950 population were obtained from a partial sample of the population. A small fraction of the people in the sample failed to respond to the census questions, making it impossible to classify them accurately into one of the education groups. The reports from the 1950 census show these people as a separate category. However, for our purposes, it was desired to have the educational distribution for the entire 1950 population and it was therefore necessary to allocate nonreporters to the education groups. This was done by calculating the percentage distribution for all people reporting their educational status and assuming that the actual distribution of the nonreporters was the same.

This assumption is arbitrary, but since nonreporters represent a small proportion (from 1.4 to 2.1 percent) of the total population for any education group, the size of the error should be negligible.

Also, the 1950 census report on educational achievements was not prepared in such a way that age group totals would agree with the complete count data presented elsewhere. It is felt that for purposes of comparability these data should be adjusted, and this was accomplished by simply expanding (or reducing) the totals in the individual education groups by a constant factor designed to yield the correct

total for the age group. The effect of these expansions was only .78 percent of the total, although the factors applied in the different age groups ranged from .9856 to 1.0305.

Tables 1, 2, and 3 contain the information necessary to begin calculations.

Available data for high school enrollments do not generally contain detail on how many first-time students are included in the total high school enrollment. Such data were, however, provided for the school year 1957-1958 and the proportion of freshmen for that year (30 percent) was used to estimate the number of freshmen in other years. Thus, of the 300,659 total high school enrollees during the decade, 90,198 are assumed to be first-time students (i.e., students moving out of the group having 0-8 years of education).

The breakdown by sex was made on the assumption that about the same proportion of eligible males enter high school as do eligible females. This assumption is not unreasonable since Montana law requires school attendance for all persons under 16. Since males accounted for 52 percent of the total Montana population with 0-8 years of school completed in 1950, it was presumed that they accounted for 52 percent of the 90,198 students entering high school during the decade. This calculation indicates that 46,903 Montana males and 43,295 Montana females entered high school for the first time during the decade.

The information on total educational movements during the decade is presented in table 4. If there had been no geographic migration for an education group, the expected total population for that group would be the sum of the survivors shown in table 2 and the net educational movement into the group shown in table 4. The difference

TABLE 1

Montana Population Aged Five and Over in 1950
(Allocated to Account for Nonreporting of Education Status
and Adjusted to Yield Proper Totals)

		Years of School Completed			
	Total	0-8	9-12	13-15	16+
Male:	274,881	154,467	87,612	19,962	12,840
Female:	247,942	116,520	95,840	25,881	9,701

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1950, Characteristics of the Population, Part 26, Montana, vol. 2 (Washington, D.C.: U.S. Government Printing Office, 1952).

TABLE 2

Montana Population Surviving to 1960 for Cohort Aged Five and Over in 1950

	Total	Years of School Completed in 1950			
		0-8	9-12	13-15	16+
Male:	242,624	132,022	81,011	18,214	11,377
Female:	230,777	106,184	91,178	24,371	9,044

Source: Computed by application of census survival rates to the data compiled for table 1.

TABLE 3

Educational Achievements in Montana During Decade
April 1, 1950 to April 1, 1960

School Year	Total High School Enrollment[1]	Males Enrolled as First-time College Students[2]	Females Enrolled as First-time College Students[2]	Male Bachelor's Degrees[3]	Female Bachelor's Degrees[3]
1949-50	25,601	1,416	856	1,508	304
1950-51	26,812	1,110	791	1,231	291
1951-52	27,181	1,005	784	941	291
1952-53	27,950	1,288	871	808	275
1953-54	29,028	1,487	985	623	292
1954-55	30,145	1,654	1,059	609	292
1955-56	31,531	1,631	1,037	713	318
1956-57	32,703	1,776	1,089	913	380
1957-58	34,365	1,793	1,142	1,104	448
1958-59	35,343	2,297	1,326	1,170	546
Total	300,659	15,457	9,940	9,620	3,437

Sources: 1. Biennial Report, State of Montana, Superintendent of Public Instruction.

2. Statistical Abstract of the United States, issues 1950 to 1960.

3. U.S. Department of Health, Education, and Welfare, Office of Education, "Degrees Conferred" (Washington, D.C.: U.S. Government Printing Office)

1949-50 Circular No. 282 (December 1950)
1950-51 Circular No. 333 (February 1952)
1951-52 Circular No. 360 (December 1952)
1952-53 Circular No. 380 (December 1953)
1953-54 Circular No. 418 (December 1954)
1954-55 Circular No. 461 (December 1955)
1955-56 Circular No. 499 (May 1957)
1956-57 Circular No. 527 (April 1958)
1957-58 Circular No. 570 (May 1959)
1958-59 Circular No. 636 (1961)

TABLE 4

Total Educational Movements in Montana During Decade
April 1, 1950 to April 1, 1960

		Years of School Completed			
		0-8	9-12	13-15	16+
Male	gain	0	46,903	15,457	9,620
	loss	46,903	15,457	9,620	0
	net	-46,903	+31,446	+5,837	+9,620
Female	gain	0	43,295	9,940	3,437
	loss	43,295	9,940	3,437	0
	net	-43,295	+33,355	+6,503	+3,437

Source: Derived from table 3 and text.

between the expected 1960 population computed under this assumption and the actual 1960 population tabulated by the census is due to net geographic migration. Tables 5 and 6 show the expected and actual population, and table 7 shows the estimate of net geographic migration by sex and education groups. Average population for each group, shown in table 8, was divided into net migration for each group to obtain the estimated net migration rates shown in table 9.

To estimate the approximate age characteristics of the migrants within each sex/education group, it is necessary to make some arbitrary assumption about the educational activity of persons aged 35 and over in 1950, since no data are available. The assumption made here, which is probably close to correct, is that these persons have ceased to pursue education. Thus, the net changes in group sizes due to educational achievement as indicated in table 4 are assumed to relate only to the age group 5 through 34.

Given this assumption, the estimates can be expanded to contain some general age detail. Procedures parallel to those used for the estimates presented in table 7 were used to estimate net migration by age groups for each sex. Survivors for each age sex/education group were estimated using census survival rates. The expected population in the groups aged 35 and over, if there had been no intercensal migration, is simply all survivors (since there is assumed to be no change due to educational movements). The expected population for the groups aged 5 through 34 is equal to survivors plus net change due to educational movement. The net geographic migration is again estimated as the difference between actual 1960 population in each group and the expected population estimated above.

The intermediate statistics and final results are given in tables 10 through 16.

TABLE 5

Expected Montana Population Aged Fifteen and Over in 1960
If There Had Been No Intercensal Geographic Migration

		Years of School Completed			
	Total	0-8	9-12	13-15	16+
Male:	242,624	85,119	112,457	24,051	20,997
Female:	230,777	62,889	124,533	30,874	12,481

Source: Derived from tables 2 and 4.

TABLE 6

Actual Montana Population Aged Fifteen and Over in 1960

	Total	Years of School Completed 0-8	9-12	13-15	16+
Male:	227,714	83,782	104,517	22,172	17,243
Female:	219,612	59,147	117,467	31,675	11,323

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1960, Detailed Characteristics, Montana, Final Report PC(1), 28D (Washington, D.C.: U.S. Government Printing Office, 1962).

TABLE 7

Net Intercensal Geographic Migration for Montana's Population Cohort Aged Five and Over in 1950

		Years of School Completed			
	Total	0-8	9-12	13-15	16+
Male:	-14,910	-1,337	-7,940	-1,879	-3,754
Female:	-11,165	-3,742	-7,066	+801	-1,158

Source: Derived from tables 5 and 6.

TABLE 8

Average Montana Population During Period
April 1, 1950 to April 1, 1960

	Total	Years of School Completed 0-8	9-12	13-15	16+
Male:	251,298	119,124	96,065	21,067	15,042
Female:	233,778	87,834	106,654	28,778	10,512

Source: Derived from tables 1 and 6.

TABLE 9

Percentage Rates of Net Intercensal Geographic Migration for Montana's Population Cohort Aged Five and Over in 1950

		Years of School Completed			
	Total	0-8	9-12	13-15	16+
Male:	-5.933	-1.122	-8.265	-8.919	-24.957
Female:	-4.776	-4.260	-6.625	+2.783	-11.016

Source: Derived from tables 7 and 8.

TABLE 10

Montana Population Aged Five and Over in 1950
(Allocated to Account for Nonreporting of Education Status
and Adjusted to Yield Correct Totals)

	Total	Years of School Completed 0-8	9-12	13-15	16+
Males 5 and over	274,881	154,467	87,612	19,962	12,840
Males 5-34	139,753	74,538	49,926	10,457	4,832
Males 35 and over	135,128	79,929	37,686	9,505	8,008
Females 5 and over	247,942	116,520	95,840	25,881	9,701
Females 5-34	133,965	64,665	54,358	11,316	3,626
Females 35 and over	113,977	51,855	41,482	14,565	6,075

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1950, Characteristics of the Population, Part 26, Montana, vol. 2 (Washington, D.C.: U.S. Government Printing Office, 1952).

TABLE 11

Montana Population Surviving to 1960 for Cohort Aged Five and Over in 1950

	Total	Years of School Completed in 1950			
		0-8	9-12	13-15	16+
Males 5 and over	242,624	132,022	81,011	18,214	11,377
Males 5-34	137,636	72,836	49,564	10,432	4,804
Males 35 and over	104,988	59,186	31,447	7,782	6,573
Females 5 and over	230,777	106,184	91,178	24,371	9,044
Females 5-34*	134,073	64,487	54,611	11,346	3,629
Females 35 and over	96,704	41,697	36,567	13,025	5,415

Source: Computed by applying census survival rates to the data compiled for table 1.

*The fact that some of the entries in this row are greater than the corresponding entries in the table of initial population is not an error. It is caused by the census survival rates for females being greater than one for the age groups 15-19, 20-24, and 25-29.

TABLE 12

Expected Montana Population Aged Fifteen and Over in 1960
If There Had Been No Intercensal Geographic Migration

	Total	Years of School Completed 0-8	9-12	13-15	16+
Males 15 and over	242,624	85,119	112,457	24,051	20,997
Males 15-44	137,636	25,933	81,010	16,269	14,424
Males 45 and over	104,988	59,186	31,447	7,782	6,573
Females 15 and over	230,777	62,889	124,533	30,874	12,481
Females 15-44	134,073	21,192	87,966	17,849	7,066
Females 45 and over	96,704	41,697	36,567	13,025	5,415

Source: Derived from tables 4 and 11.

TABLE 13

Actual Montana Population Aged Fifteen and Over in 1960

	Total	Years of School Completed 0-8	9-12	13-15	16+
Males 15 and over	227,714	83,782	104,517	22,172	17,243
Males 15-44	129,775	28,298	74,630	15,225	11,622
Males 45 and over	97,939	55,484	29,887	6,947	5,621
Females 15 and over	219,612	59,147	117,467	31,675	11,323
Females 15-44	127,819	19,375	82,972	19,086	6,386
Females 45 and over	91,793	39,772	34,495	12,589	4,937

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1960, Detailed Characteristics, Montana, Final Report PC(1), 28D (Washington, D.C.: U.S. Government Printing Office, 1962).

TABLE 14

Net Intercensal Geographic Migration for Montana's Population Cohort Aged Five and Over in 1950

	Total	Years of School Completed 0-8	9-12	13-15	16+
Males 5 and over	-14,910	-1,337	-7,940	-1,879	-3,754
Males 5-34	-7,861	+2,365	-6,380	-1,044	-2,802
Males 35 and over	-7,049	-3,702	-1,560	-835	-952
Females 5 and over	-11,165	-3,742	-7,066	+801	-1,158
Females 5-34	-6,254	-1,817	-4,994	+1,237	-680
Females 35 and over	-4,911	-1,925	-2,072	-436	-478

Source: Derived from tables 12 and 13.

TABLE 15

Average Montana Population During Period
April 1, 1950 to April 1, 1960

	Total	Years of School Completed 0-8	9-12	13-15	16+
All males	251,298	119,124	96,065	21,067	15,042
Males 5-34 in 1950	134,764	51,418	62,278	12,841	8,227
Males 35 and over in 1950	116,534	67,706	33,787	8,226	6,815
All females	233,778	87,834	106,654	28,778	10,512
Females 5-34 in 1950	130,892	42,020	68,665	15,201	5,006
Females 35 and over in 1950	102,886	45,814	37,989	13,577	5,506

Source: Derived from tables 10 and 13.

TABLE 16

Percentage Rates of Net Intercensal Geographic Migration for Montana's Population Cohort Aged Five and Over in 1950

	Total	Years of School Completed 0-8	9-12	13-15	16+
All males	-5.933	-1.122	-8.265	-8.919	-24.957
Males 5-34 in 1950	-5.833	+4.600	-10.244	-8.130	-34.059
Males 35 and over in 1950	-6.049	-5.468	-4.617	-10.151	-13.969
All females	-4.776	-4.260	-6.625	+2.783	-11.016
Females 5-34 in 1950	-4.778	-4.324	-7.273	+8.138	-13.584
Females 35 and over in 1950	-4.773	-4.202	-5.454	-3.211	-8.681

Source: Derived from tables 14 and 15.

CONCLUDING REMARKS

This paper is designed to provide insight into the educational characteristics of Montana's net geographic migrants. Due to the necessity of using data from decennial censuses, the most recent decade for which this analysis can be conducted is 1950 to 1960. Although the results are somewhat dated, the findings for that decade are probably fairly representative of what has happened since.

The relatively small bases involved in the computation of the percentages for the graduate group should be kept in mind in interpreting their meaning. For many purposes, it is not meaningful to make comparisons between percentage rates when the magnitudes to which the rates apply are quite different. It is, perhaps, more illuminating to note that Montana produced slightly over 13,000 college graduates during the decade 1950 to 1960 and experienced a net loss through migration of about 5,000 people from the college graduate group during the same period. Thus, the actual increase in the size of this group was about 62 percent of what it would have been with zero net migration. It is not unreasonable to assume from this that the number of job opportunities for college graduates increased during the decade by only about 62 percent of what was needed in order for Montana to fully utilize the "resources" produced by the state's colleges.

Any state that does not provide jobs equal to the number of its college graduates in any year will probably experience net outmigration about equal to the surplus. The net loss through migration in the

college graduate group for Montana can be expected to continue until the number of new jobs requiring college graduates is roughly comparable in each year to the number of graduates produced.

This balance has probably not yet been reached in Montana; in fact, the number of graduates leaving the state during the decade 1960 to 1970 may be even greater than it was from 1950 to 1960.

The data are not yet available to establish the precise numbers for 1960 to 1970. However, when the reports from the 1970 census are published, this analysis can (and should) be repeated.